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ABSTRACT

Plans for program assessment within the various units of the University System of Georgia are presented. The Subcommittee on Academic Degree Program Assessment believed the University System of Georgia should encourage and support a sustained effort to assess academic programs resulting in baccalaureate degrees, that the implementation of program assessment must be based on an understanding of the problems involved, and that program assessment should be approached with recognition of limitations and restrictions inherent in evaluations of academic programs. In identifying what should be assessed, two areas noted were: courses constituting the student's area of specialization and courses comparing the student's entire degree program. Some of the seven problems of program assessment at the baccalaureate level are: specifying program objectives; measuring change, growth, or development; and funding the assessment. Subcommittee recommendations include the following: a rational for program assessment should be adopted at the System level; the primary responsibility for program assessment should be in the academic departments of the institutions; assessment procedures should include standardized tests; and program assessment results or outcomes should be properly used and studied. Alternatives and options for consideration are: written comprehensive exams; standardized tests; practical assessment; senior projects; senior seminar; outside examiners; oral senior exams; apprenticeship, internship, or supervised practicum; and activity and outcome measures. Contains 31 references. (SM)

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ACADEMIC DEGREE PROGRAM ASSESSMENT IN THE UNIVERSITY SYSTEM OF GEORGIA: A TENTATIVE STATEMENT OF RATIONALE, PURPOSES, AND PROCEDURES

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ACADEMIC DEGREE PROGRAM ASSESSMENT IN THE UNIVERSITY SYSTEM OF GEORGIA: A TENTATIVE STATEMENT OF RATIONALE, PURPOSES, AND PROCEDURES

Prepared By
Subcommittee on Academic Degree
Program Assessment

June 1977

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ACADEMIC DEGREE PROGRAM ASSESSMENT IN THE UNIVERSITY SYSTEM OF GEORGIA:

A Tentative Statement of Rationale, Purposes, and Procedures

A major need confronting the University System of Georgia is consolidation of the growth and expansion within the System over the past two decades. For the System as a whole, there is no longer an urgent concern with growth in facilities, faculty, enrollments, and programs, but there is a concern for quality. To solidify the gains made in periods of rapid growth, some form of program evaluation or assessment is desirable.

The problems and issues of evaluation and accountability have been addressed in numerous publications since the mid-sixties. The literature places a strong emphasis on indices, signs, or standards of program quality that demonstrate the value, worth, or effectiveness of academic programs within public systems of higher education. The Subcommitte on Academic Degree Program Assessment believes the University System of Georgia should encourage, foster, and support a sustained, concerted effort to assess academic programs resulting in a baccalaureate degree.

The Subcommittee believes, however, that the implementation of program assessment must be based on an understanding of the problems and difficulties involved, and that program assessment should be approached with recognition of the limitations and restrictions that are inherent in attempts to evaluate academic programs. Whether the approach is called program assessment or program evaluation may be a matter of semantical preference. The Subcommittee has accepted the term program assessment as descriptive and presents in this document a statement of rationale, purposes, and procedures for implementing workable forms of program assessment within the various units of the University System.

Definitions of Program Assessment

There are many definitions of evaluation or assessment that the Subcommittee finds acceptable. We agree with Stake and Denny (1969) that evaluation is *not* "a search for cause and effect, an inventory of present status, or a prediction of future success" but a combination of all three contributing to an understanding of program substance, function, and worth. Evaluation may have many purposes but it is primarily an attempt "to describe something and to indicate its perceived merits and shortcomings." The Phi Delta Kappa Study Committee on Evaluation (1971) has given a succinct definition of evaluation as "the process of delineating, obtaining, and providing useful information for judging decision alternatives." This prestigious committee states explicitly that the purpose of evaluation is not to prove – but to improve.

Two types of evaluation have been identified as formative and summative evaluation. Formative evaluation is viewed as the efforts of educators to improve curricula during their development and summative evaluation as the final or conclusive evaluation that would be made when termination of a course, program, or project is necessary. In summative evaluation the focus is on judgements or overall conclusions that would specify the terminal worth or value of the program. Formative evaluation is ongoing and continuous, seeking ways to improve or help.

The Subcommittee has a decided preference for forms of program assessment that are formative rather than summative; that are ongoing and continuous with a definite committment to the improvement of teaching and learning; that focus on useful information that will improve academic programs; and do not become obsessed with or dictated by efforts to establish cause-and-effect, comparative worth, or permanent value. The Subcommittee

believes that all approaches to program assessment must be flexible, adaptive, and provisional. The Subcommittee, in its deliberations, has rejected all notions that there is a single, best way of evaluating academic programs; quite explicit in many of the Subcommittee's discussions is the belief that program assessment or evaluation must be a learning experience for those who are involved.

The Subcommittee also believes that the purposes and intent of program assessment should be explicitly stated and communicated to the faculty and students of the various units within the University System. Suggested or recommended procedures for program assessment should be directly related to the purposes of program assessment, and a rationale for program assessment should be developed that would be explicit about the uses and applications that will be made of data and information.

Reactions to Program Assessment

Respondents to a questionnaire on degree program assessment in the University System of Georgia have expressed the belief that such assessment is needed and that it would be an important factor in determining the direction of program development. They have also expressed the belief that implications of program assessment and its implied standards for comparison should be carefully considered.

Respondents represented the university, senior college, and junior college levels of the University System. In identifying what should be assessed, two areas of assessment were noted: (1) courses constituting the student's area of specialization, and (2) courses comprising the student's entire degree program. Respondents were closely divided as to whether tests used in assessment should be developed at the local institution, developed system-wide,

or developed nationally. If tests were developed nationally, however, the majority of respondents believed that local or system norms should be used. If the tests were developed on a system-wide basis, no clear-cut choice was rendered as to the preference for local or system norms. The majority also believed that program assessment should take place annually. If tests are to be administered, the taking of such tests should be a graduation requirement; respondents were divided in their opinions as to whether the results should be entered into the student's permanent record. Many were concerned that institutions' autonomy be preserved. For instance, if tests were used, a frequent comment was that testing should not be allowed to act to eliminate diversity of programs within the system.

Problems and Issues

The difficulties of establishing valid procedures for program assessment are seen in the magnitude and scope of academic programs offered within the University System. The 32 units of the University System enroll over 130,000 different individuals in academic programs of various kinds. Approximately 24,000 degrees are awarded in a given year. Many of these degrees are advanced, specialized, or professional degrees based on prescribed courses of study that do not easily lend themselves to assessment or evaluation in general terms. Although most degrees can be classified as associate, baccalaureate, masters, or doctoral degrees, there are numerous atypical degree programs within the University System that serve specific educational needs in restricted locations.

The problems and issues of program assessment at the baccalaureate level may be identified tentatively as follows:

1. *The difficulties of specifying what constitutes a major field of*

study within a given institution. Since degree programs include both general and specialized studies, it is often difficult to define the field or academic discipline that constitutes the student's major (i.e. the 30-40 quarter hours in which the student has "specialized").

2. *The difficulties of specifying program objectives.* Clearly, the first step is identification of the goals of the program. Both immediate as well as ultimate goals of a program must be considered in terms of desired outcomes for the student. The problem was described a quarter-century ago by Lindquist:

> Ideally . . . immediate objectives should in every instance have been clearly and logically derived from accepted ultimate objectives, in full consideration of all relevant characteristics of the pupils who are to receive instruction. Ideally, also, the immediate objectives should be supported by dependable empirical evidence that their attainment will eventually . . . make possible the realization of the ultimate objectives. (Lindquist, 1951, p. 121)

Objectives should not be so vague as to be universal, but not so specific as to limit concentration to specified goals that exclude other matters; specific goals are almost always samples of what students should have learned. While it is not possible to evaluate objectives when they are stated in global terms, detailed lists of behavioral objectives also have drawbacks,

reducing the flexibility of the system and exacting a high cost in time and effort required to develop them well. Setting objectives and outcome measures at the program level offers the greatest hope for yielding useful evaluations.

Since the accomplishment of goals can be inferred only through the observation of behavior, the next step in evaluation is specifying the behavior we can accept as evidence of goal achievement. The goals will themselves aid in selecting a format for deciding which outcome measures to use. If the goal is graduate school, standard exams such as the GRE might work. A program in the arts, on the other hand, might use faculty from another college to assess students' exhibited works. For others, senior seminars or theses could be best.

The congruence between goals and students' performance on the chosen outcome measure will then enable the department to find areas which need more emphasis, helping to define the courses needed to meet the goals of a program.

New program development objectives give direction to education through help in planning, directing, and providing criteria for evaluating student outcomes. But the objectives themselves are cyclical; a comprehensive plan begins with setting tentative objectives, finding the educational strategies to reach them, measuring the degree of attainment, and then reevaluating both objectives and strategy (see Mehrens & Lehmann, 1973).

3. *The difficulties of identifying the goals and objectives of*

assessment itself. As Gronlund (1971) had noted, evaluation involves two basic steps: (1) identifying and defining the objectives of instruction, and (2) constructing or selecting evaluation instruments which best appraise the objectives. Program assessment is often confused with institutional assessment, and the program itself often confuses general with specialized requirements for graduation. In other words, it is necessary to specify quite carefully what is being assessed: the major field of the student; the total collection of courses that the student has taken to meet degree requirements; or the specific sequence of courses that the student regards as his particular area of academic competency.

Evaluation by specific departments within each unit of the University System should provide information for instructional improvement and should take into account differences in emphasis among institutions and departments. It can provide a means for departments at different institutions, if they wish, to cooperate, compare, and contrast their aims and their outcomes, preserving needed diversity and fostering positive growth in institutions.

4. *The difficulties of measuring change, growth, or development.* Students entering the various units of the University System differ appreciably in academic ability, motivation, and previous preparation. As Davies (1976) has noted, "we must measure progress relative to the student's ability at the start of his or her college career." It is not reasonable to utilize a single standard such as the GRE when attempting to measure or assess all the

students within a specific program of a given unit of the University System. Since outcomes are influenced so heavily by inputs, the failure to control initial ability and preparation obscures the actual contribution or value-added of the academic program itself. It is often impossible to identify what the institution or the program has done for the student.

The pretest--learning--post-test format, which seems such an obvious solution to the problem, involves many difficulties in delineating the cause of a change, if change is found.

> When scores on a test are observed to change, how can one tell whether it is the persons who have changed or the tests? If the correlation between pretest and post-test is reasonably high, we . . . ascribe changed scores to changes in the individuals. But if the correlation is low, or if the pattern of correlations with other variables is different on the two occasions, we may suspect that the test does not measure the same thing on the two occasions . . . if some people's [scores] change in one direction and others change in the opposite direction . . ., this makes the subject more interesting–at the same time that it lowers the test-retest correlation (Bereiter, 1963, pp. 11, 13).

5. *The impact of assessment or evaluation on curriculum development.* Because assessment or evaluation often poses a threat to both faculty and students, there are difficulties in

specifying how assessment is to influence the quality of instruction given students, the nature and content of what they study, and the overall program responsibilities of academic departments. While "teaching the test" is often over-rated as a consequence of assessment, the initiation of assessment procedures is known to influence in both subtle and direct ways the program itself (see Fields, 1976).

6. *The extent or magnitude of assessment procedures and the requirement of general or specific instruments of assessment.* The diversity of academic programs must be reconciled with the need to identify common dimensions or components in fields of study. Academic programs are neither unique for the individual nor uniform for all degree recipients; a balance must be struck between the needs of the student for individualized instruction and the need to assess what is common to programs labeled or identified by a common title. The presence of both institutional and program differences implies that a balance must be struck between a common approach or procedure for the System as opposed to specific or unique approaches within degree programs.

7. *The difficulties of funding and the cost/effectiveness of program assessment itself.* The costs of an adequate program assessment procedure are both direct and indirect. Faculty involvement and participation could represent a substantial cost that may be indirect in the definition of program objectives and the selection of appropriate assessment methods. Faculty

participation may be a direct cost when they are heavily engaged in the construction, development, and interpretation of assessment techniques. The cost of administering, scoring, reporting, and interpreting standardized tests will vary appreciably from program to program but such expenses will represent a direct cost to the budgetary unit explicitly charged with the responsibility. The cost/effectiveness of selected assessment procedures is difficult to determine but one which must be realistically considered. Techniques or procedures that are prohibitive in cost are unlikely to be successful in improving program quality. The decision to embark on a program assessment must be made with full understanding of the cost involved and a determination that the outcome of the assessment will be worth the cost.

RECOMMENDATION: WHILE THE PROBLEMS AND ISSUES OF PROGRAM ASSESSMENT ARE COMPLEX, AND BY NO MEANS EXHAUSTED BY THE ABOVE DISCUSSION, THE SUBCOMMITTEE BELIEVES THAT A SYSTEMATIC ATTEMPT TO ASSESS ACADEMIC DEGREE PROGRAMS WITHIN THE UNIVERSITY SYSTEM OF GEORGIA IS IN THE BEST INTEREST OF HIGHER EDUCATION WITHIN THE STATE. THE SUBCOMMITTEE RECOMMENDS, THEREFORE, THAT PROGRAM ASSESSMENT SHOULD BE IMPLEMENTED AND SHOULD FOLLOW THESE GUIDELINES:

1. A rationale for program assessment, such as the one provided by this document, should be adopted at the System level and should be explicit in the requirement that academic departments adopt program assessment procedures.

2. The primary responsibility for program assessment should reside in the academic departments of the various institutions. Each academic department should define those programs of instruction for which it is responsible at the baccalaureate level, should identify program objectives, and should specify how those programs will be assessed.

3. Assessment procedures should include standardized tests, when available and appropriate. In the absence of such standardized examinations, the academic department should develop assessment means and procedures whose nature and outcomes can be meaningfully communicated. Since the results of standardized examinations alone do not provide a complete basis for assessing a degree program, academic departments should also employ additional evaluative methods which add credibility to the assessment procedure.

4. The results or outcomes of program assessment should be properly used and studied. The chief academic officer on each campus should be responsible for assuring that assessment procedures result in the improvement of programs of study and that assessment procedures are conducted at intervals frequent enough to insure ongoing quality programs.

Purpose and Expected Outcomes

While the Subcommittee believes that program assessment should be the responsibility of the separate academic departments, it believes also that

each assessment effort should be developed within a common framework for the University System.

The PURPOSE OF PROGRAM ASSESSMENT should be the improvement of programs of instruction within the University System of Georgia. As Cronbach (1963) has stated, evaluation may be broadly defined as "the collection and use of information to make decisions about an educational program." Cronbach also notes that evaluation is a diversified activity and no one set of measures will suffice for all programs or situations. The primary purpose for a form of systematic assessment is for course or program improvement. There is an emerging consensus that the intent of evaluation or assessment should be to improve ongoing activities and functions, and not merely to prove or disprove the effectiveness or efficiency of what has been done in the past. In short, the result of program assessment should be the improvement of what students learn in the public colleges and universities of the State and how they are taught. The purpose of program assessment, as such, should be clearly distinguished from faculty evaluation, managerial efficiency, cost/benefit analyses, and other approaches that raise emotional or political questions.

The IMPLEMENTATION OF PROGRAM ASSESSMENT should be as flexible as possible, meeting the peculiar or unusual needs of the separate institutions and their various academic departments. The alternatives and options for program assessment should be as broad as possible within the needs and demands of the situation. When common or standardized examinations are not preferable, senior projects, seminars, and other approaches can be useful. Whatever the approach or procedure adopted, however, the implementation of those procedures

should provide an indication of program effectiveness that can be reported, analyzed, and used in a system-wide effort.

The EXPECTED OUTCOMES OF PROGRAM ASSESSMENT should be indicators of program effectiveness that will permit and encourage better quality of instruction, a better organization of degree requirements, and a more effective program of study in general. Many institutions, such as Princeton, Duke, and New York University, after undergoing thorough evaluation programs and careful assessment of objectives found basic changes which could be implemented to better meet their goals (Heiss, 1973). Outcomes should be both explicit and specific in their implications for helping students learn more effectively and for assisting faculty members in teaching more efficiently. It should be recognized that some aspects of program effectiveness will necessarily be subjective; while objective, quantitative indices are preferable, other indices can be developed in a systematic, responsible manner. The way in which program assessment is attempted may well be its most important feature.

Alternatives and Options for Consideration

Various methods and approaches for program evaluation will prove useful to the numerous academic departments within the University System. Although not exhaustive, the following list of methods, approaches, and procedures provide or suggest alternatives or options that might be exercised in the implementation of program assessment. As mentioned previously, standardized tests should be included when available and appropriate. Yet as most manuals of standardized tests point out, standardized tests should *not* be the only means of evaluation. With this as a working principle, desirable and effective methods of program assessment may be:

1. *Written Comprehensive Examinations.* Many undergraduate colleges have reviewed and revised the comprehensive examination concept as a device to encourage students to organize, integrate, and relate knowledge, to adopt study habits that will enhance learning throughout their lives, and to take responsibility for their own education. Such an examination is usually given during the senior year and covers the student's major field. In other cases, the examination represents a comprehensive evaluation of the student's total program (Heiss, p. 113). A written comprehensive examination should be prepared and graded by the departmental faculty and then discussed individually with the students. Some advantages of this method are the requirement of both literacy skills and basic academic competencies, as well as content or subject matter competency. The examination may be based on the courses the students have taken or geared toward what the student expects to do upon graduation (i.e. career choice, or continuation on to graduate school).

2. *Standardized Tests.* Respondents to a questionnaire on degree program assessment in the University System of Georgia were about equally divided on whether tests should be developed locally, system-wide, or nationally. But they did agree that system-wide or local norms should be used for evaluation rather than national norms. Where uniform or common examinations are preferred, the Undergraduate Assessment Program (UAP), which ETS has developed, should be considered. The UAP offers a program of 48 examinations which can be used "for

measuring the academic abilities and achievement of college students as part of an institution's own self-study or planning." The examinations offered by the UAP can be used to measure student progress toward general educational goals or the achievement of some degree of specialization in a particular field of study. As mentioned in the UAP Guide, however, a major drawback of the UAP is that it cannot be based on an individual course or set of courses.

Specific examples of the UP Field Tests are:

Art History
Biology
Business
Chemistry
Drama and Theatre
Economics
Education
Engineering
French
Geography
German
History
Literature
Mathematics
Music
Philosophy
Physical Education
Physics
Political Science
Psychology
Scholastic Philosophy
Sociology
Spanish
Speech Pathology and Audiology

Also available from ETS are 19 advanced GRE tests which cover the following areas:

Biology
Chemistry
Economics
Education
Engineering
French
Geography
Geology
German
History
Literature in English
Mathematics
Music
Philosophy
Physics
Political Science
Psychology
Sociology
Spanish

The GRE Advanced Tests and the UP Field Tests are designed to assess the mastery of concepts, principles, and knowledge in specific subjects expected of students at the conclusion of major study. Both sets of tests measure more than factual knowledge; they evaluate students' ability to analyze and solve problems, understand relationships, and interpret material in their major fields . . . The UP Field Tests are counterparts of the GRE Advanced Tests. Each Field Test has been statistically equated to the Advanced tests in the same field. Therefore, a student's performance on the UP Field Test is a good estimate of the score he would receive on the corresponding GRE Advanced Test. The UP Field Tests are administered at the junior and senior class levels (UAP, 1976, pp. 7-8).

Georgia State University has used ETS' Cooperative General Culture Test as a measure of general achievement and the Cooperative English Expression Test as a measure of facility with the English language. Other, more specific tests have been used within departments, such as the standardized language examinations in French, German, Latin, and Spanish (Fincher, 1964).

The College Outcome Measures Project (COMP), currently being developed by ACT, will be aimed at evaluating more general features of college education relevant to adult functioning in society. Field testing should be complete by September, 1978. COMP will test for these objectives:

(1) Communicating -- send and receive information

in a variety of modes (written, graphic, oral, numeric, and symbolic), within a variety of settings (one-to-one, in small and large groups), and for a variety of purposes (for example, to inform, to understand, to persuade, and to analyze).

(2) Solving problems -- analyze a variety of problems (for example, scientific, social, personal); select or create solutions to problems; and implement solutions.

(3) Clarifying values -- identify one's personal values and the personal values of other individuals, understand how personal values develop and analyze the implications of decisions made on the basis of personally held values.

(4) Functioning within Social Institutions – identify those activities and institutions which constitute the social aspects of a culture (for example, governmental and economic systems, religion, marital, and familial institutions, employment, and civic volunteer and recreational organizations); understand the impact that social institutions have on individuals in a culture; analyze one's own and others' personal functioning within social institutions.

(5) Using Science and Technology -- identify those activities and products which constitute the scientific/technological aspects of a culture (for example, transportation, housing, energy, processed food, clothing, health maintenance, entertainment and recreation, mood-altering, national defense, communication, and data processing); understand the impact of such activities and products on the individuals and physical environment in a culture; analyze the uses of technological products in a culture and one's personal use of such products.

(6) Using Art - identify those activities and products which constitute the artistic aspects of a culture (for example, graphic art, music, drama, literature, dance, sculpture, film, architecture); understand the impact that art has on individuals in a culture; analyze uses of works of art within a culture and one's personal use of art (Forrest, 1977).

The ACT Proficiency Examination Program (PEP) was designed to measure students' proficiency attained primarily outside the classroom. Nevertheless, the objectives and content of the tests are so thoroughly described that they might provide an estimate of students' attainment of program objectives in some areas of study. Some of the examinations cover only the content of

introductory courses, others are at more advanced levels, and some of the examinations cover a number of levels simultaneously. The content and objectives of each examination are covered in the *Book on Syllabuses,* available from ACT. Each syllabus contains a list of objectives, description of examination content, references, and the names of faculty members who developed the examination. Score reporting varies among tests, with some tests having pass/fail grading, others receiving letter grades, and the rest having standard scores. Testing time ranges from 3 to 7 hours; fees range from $25 to $150 per test. A list of available examinations follows:

African and Afro-American History
American Literature, pre- and post-Civil War
Anatomy and Physiology
Earth Science
Freshman English
Shakespeare
Introduction to Criminal Justice
Criminal Investigation
Accounting, Levels I and II
Accounting, Level III in:
(1) business law and federal income taxation,
(2) auditing and cost analysis, and
(3) advanced accounting theory and problems
Finance, Levels I, II, and III
Management of Human Resources, Levels I, II, and III
Marketing, Levels I, II, and III
Operations Management, Levels I, II, and III
Business Environment and Strategy
Educational Psychology
History of American Education
Philosophy of Education
Reading Instruction in the Elementary School
Corrective and Remedial Instruction in Reading
Personal Health, Physical Aspects
Personal Health, Emotional-Social Aspects

Public and Environmental Health
Fundamentals of Nursing
Maternal and Child Nursing, Associate Degree
Maternal and Child Nursing, Baccalaureate Degree
Adult Nursing
Psychiatric/Mental Health Nursing
Commonalities in Nursing Care, 2 Areas
Differences in Nursing Care, 3 Areas
Nursing Health Care
Occupational Strategy, Nursing

3. *Practical Assessment.* This approach may be applicable in disciplines requiring the use of some demonstrable skill in the laboratory, studio, or field, providing more information than written or oral tests might. This method is probably more meaningful in a continuous evaluation than in a single, timed performance.

4. *Senior Projects.* It is important that a clear statement of the purposes of the project and the establishment of criteria for its assessment be expounded. An example of this is a Bachelor's thesis.

5. *Senior Seminar.* This is similar to the Honors Seminar presently being used at the University of Georgia (e.g. HIS 310H) to integrate information obtained through coursework in a program. This would include a paper or project demonstrating skills and thought developed in the program, as well as basic skills expected of all graduates.

6. *Outside Examiners.* The use of outside examiners frequently provides objective, career-oriented evaluations for professional

programs such as engineering and architecture. Such evaluation might be particularly relevant for programs with specific careers as objectives for their graduates. As Schein (1972) has noted specific goals to be achieved by students should "be translated into a set of performance criteria that should determine how to measure student performance . . . Future employers should also be involved in determining criteria since they know best what they are really looking for as a basis of hiring"(p. 147). Supervisory personnel with whom students have worked in apprenticeship, internship, or practicum may also serve in this capacity.

7. *Oral Senior Exams.* Since most people, after leaving the college or university, will spend more time communicating orally than in writing, oral exams may offer an effective manner of determining the individual's ability to "articulate and expand" on particular topics or issues relevant to his program of study. Objectives and procedures must be carefully developed and adhered to, if such evaluations are to be meaningful.

8. *Apprenticeship, Internship, or Supervised Practicum.* These approaches would evaluate students in future work settings. The practicum has been used in graduate programs, such as counseling and clinical psychology, but could be applied at the undergraduate level, or in two-year programs, as several schools have done (such as merchandising, fashion design, and business at Orange Coast College in California; speech at the University of Montana; the pre-medical program at MeHarry Medical School in Nashville). Other areas where this approach has been successful are: journalism, business, and public administration.

9. *Activity and Outcome Measures.* The Higher Education Outcomes Measures Identification Study (OMIS), conducted in Spring 1974, purported to help practitioners and researchers gain a better understanding of the outcome information important to different decision makers and accessible to them. It was intended also to assist in identifying a set of outcome measures for which data acquisition procedures need to be developed.

As a result of OMIS, NCHEMS has published the *Outcome Measures and Procedures Manual* (1975) which defines a wide range of measures of the outcomes (results or impacts) of postsecondary institutions and their programs and suggests procedures for acquiring the data needed for each measure. The outcome measures described in the manual are ones identified in a survey of institutional and state-level decision makers as providing the information most needed about the impacts of postsecondary education.

The *Outcome Measures and Procedures Manual* has been developed to help decision makers deal with the problems of identifying, measuring, and analyzing postsecondary education outcomes. The manual does this by presenting an array of alternative procedures for obtaining a variety of potential measures or indicators of the outcomes of postsecondary institutions and their programs. The manual provides: (a) a list of postsecondary education outcome measures of indicators

that have been identified as highly relevant to the outcome information needs of institutions and state-level educational decision makers, (b) standard definitions of each outcome measure to facilitate communication among decision makers, and (c) specific procedures that can be used for acquiring data related to each outcome measure presented in the manual.

Examples of the outcome measures are:

- Student development concerning *breadth* of knowledge
- Student development concerning *depth* of knowledge
- Student success in passing certification and licensing examinations
- Areas and agents of student change during college
- Highest degree or certificate planned
- Program completions during a certain time period
- Program completions from transfer status
- Degrees and certificates earned by an entering class
- Educational program dropouts
- Additional degrees and certificates sought
- Level of achievement of former students in another institution
- Student satisfaction with overall educational experience
- Student satisfaction with vocational preparation
- Student satisfaction with knowledge and skills in the humanistic area
- Student satisfaction with critical thinking ability
- Student satisfaction with human relations skills
- Student success in obtaining *first* job
- Employment in major field of study.

In addition to student activity and outcome measures, academic departments should provide some indication of program effectiveness in terms of faculty productivity. NCHEMS has provided several measures or indicators which can be used in determining faculty productivity. Some examples are:

- Distribution of publications by type of publication (books, journal articles, monographs, etc.)
- Number of times a given publication is cited in bibliographies of other authors within a certain time period
- Number of articles published per faculty/staff member in prestigious journals within a certain time period
- Number and percentage of faculty/staff and students *invited* to particpate in professional meetings and conferences
- Recognition of faculty members by peers and students for outstanding teaching ability
- Average amount of faculty time spent in selected research and art-producing activities
- Number of proposals funded for certain purposes (e.g. research versus training) by level of funding as a percentage of all proposals submitted
- Judgements of peer groups and/or potential beneficiary groups regarding the worth/impact of research project results.

10. *Other Options.* The Senior Exit Examination Committee of the Academic Advisory Committee on Psychology have suggested several alternative methods of assessment:

- projects in which student and faculty can take pride and which express originality, such as Bachelor's thesis or original project
- examinations which emphasize the highest goals of a liberal arts education, e.g. the baccalaureate examination which is required to exit the French Lycee is standardized but also requires subjective essays on subjects of universal concern
- peer assessment. Aside from an annual report by chairman of a department, presentations of every program would be annually made to audiences of colleagues in other programs where values, goals, and particular successes or deficiencies are all presented in this manner
- individual terminal seminars. Courses, which relate to the twin goals of broad liberal arts or sciences insight and narrower area understanding, can be integrated so that the student can then profit from the course and the course can be used for the general assessment of success according to the goals
- any kind of assessment procedure which is developed by a department or program and which includes the overall arts or science objectives as long as there is consistency within the approach and the approach is recognized as generally valid by the college.

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